Data-Mining Technologies for Diabetes: A Systematic Review

Miroslav Marinov, M.S.,1 Abu Saleh Mohammad Mosa, M.S.,1 Illhoi Yoo, Ph.D.,1,2 and Suzanne Austin Boren, Ph.D., MHA1,2

Abstract

Background:
The objective of this study is to conduct a systematic review of applications of data-mining techniques in the field of diabetes research.

Method:
We searched the MEDLINE database through PubMed. We initially identified 31 articles by the search, and selected 17 articles representing various data-mining methods used for diabetes research. Our main interest was to identify research goals, diabetes types, data sets, data-mining methods, data-mining software and technologies, and outcomes.

Results:
The applications of data-mining techniques in the selected articles were useful for extracting valuable knowledge and generating new hypothesis for further scientific research/experimentation and improving health care for diabetes patients. The results could be used for both scientific research and real-life practice to improve the quality of health care diabetes patients.

Conclusions:
Data mining has played an important role in diabetes research. Data mining would be a valuable asset for diabetes researchers because it can unearth hidden knowledge from a huge amount of diabetes-related data. We believe that data mining can significantly help diabetes research and ultimately improve the quality of health care for diabetes patients.